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09/303,356	04/29/1999	DAVID W. BACHMANN	AT9-98-955	8249

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EXAMINER

NGUYEN, TAM V

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/303,356

Applicant(s)

BACHMANN ET AL.

Examiner

Tam V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. The applicant's amended claims 1, 2, 4-5, 7, 9, 12, 14, 16, and 19 have been received on 03/26/03. The pending claims are 1-20.

Response to Arguments

2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy (US 6134852) in view of Bachmann (US 6085188).

With respect to claims 1 and 16, Kennedy discloses the database 39 can include multiple data fields, organized within an array structure, for maintaining message related information. To support download and delete operations, typical data fields of the database include: a session identifier (session ID) 200, a unique identifier (UIDL) 205, a message size 210, an entry identifier (EID) time, an "on server" flag 225, a "download" flag 230, and a supported by adding to the database structure certain data fields corresponding to portions of a MIME-compatible message, such as a message group

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identifier (message group ID) 240, a message part number 245, and a total part number 250, (col. 9, lines 50-62) as step of **determining to tag the directory entry for subsequent deletion by setting an attribute of the directory entry to a predetermined value**. The user also can set a time-based parameter in the message manager program module 37 that define a time period for expiring all messages maintained in the local message store 38 after pre-defined time period. Because the database 39 maintains local time entries for each message, those messages satisfying the pre-defined time period for expiration can be marked with a "delete" flag. In this example, the user has set a seventy-two hour time period for expiration of a message and its associated message entry, (col. 11, lines 55-64) as step of **periodically searching for tagged directory entries in the first database table during a cleanup process interval**. Message entries containing "delete" flags in the database 39 can be deleted from the server 49 after all messages retrieval operation are completed. In particular, all message entries marked with a "delete" flag are located in response to walking the message entries in the database 39 and thereafter, are deleted from the server 49, (col. 11, lines 65-col. 12, lines 3) as step of **deleting references to the tagged directory entries throughout the set of database tables**.

Kennedy discloses in FIG. 3., a remote computer 49 operates as a server and generally includes an e-mail server application 110, a local site 115, and a client manger control 120. The client 20 includes a local message store 38, a database 39, an e-mail program module 36, and a message manager program module 37 for facilitating message management and operation of the database, (col. 8, lines 51-60).

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However, Kennedy does not disclose ***receiving a request to delete a directory entry; responsive to receiving the request to delete directory entry; and updating a first database table storing the attribute of the directory value.*** Bachmann discloses in FIG. 1, a client machine 10 makes a TCP/IP connection over network 11 to an LDAP server 12, sends requests and receives responses. LDAP server 12 supports a directory 21 as illustrated in a simplified form in FIG. 2. Each of the client and server machines further include a directory "runtime" component 25 for implementing the directory service operations as will be described below. The directory 21 is based on the concept of an "entry" 27, which contains information about some object (e.g., a type and one or more values. Each attribute 29 has a particular syntax that determines what kinds of values are allowed in the attribute (e.g., ASCII text, binary characters, and the like), (col. 3, lines 48-61) as step of ***receiving a request to delete a directory entry and responsive to receiving the request to delete a directory entry.*** FIG. 8 is a flowchart for a routine call ldap-add for adding entries to the database. Because the directory structure will be changed when entries are added into the database, the parent table (or ldap_entry) and the descendant table (ldap_desc) are updated to reflect the change. In other word, after all table get created, the ldap_add routine is use to populated the table with correction information; (col. 6, lines 60-68) as step of ***updating a first database table storing the attribute of the directory entry.*** Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kennedy with the teachings of Bachmann. By doing so, the system provides a faster search and more efficient, (col. 2, lines 9-10).

As to claims 2 and 10, Kennedy further discloses wherein the directory entry is tagged by setting its creation time attribute to a given value, (Col. 11, lines 48-Col. 12, lines 8 and Col. 13, lines 33-Col. 14, lines 68)

As to claims 3 and 11, Kennedy further discloses wherein the given value is a null value, (Col. 11, lines 48-Col. 12, lines 8 and Col. 13, lines 33-Col. 14, lines 68).

As to claims 4 and 17, Kennedy further discloses performing a search for directory entries that satisfy a search query, (Col. 13, lines 66-Col. 14, lines 47); and excluding tagged directory entries from search results that otherwise satisfy the search query, (Col. 21, lines 54-Col. 23, lines 18).

As to claim 5, Kennedy further discloses wherein the step of excluding tagged directory entries includes modifying an SQL query to exclude rows having null change creation, (Col. 8, lines 51-Col. 9, lines 63).

As to claims 6 and 18, Kennedy discloses the database 39 can include multiple data fields, organized within an array structure, for maintaining message related information. To support download and delete operations, typical data fields of the database include: a session identifier (session ID) 200, a unique identifier (UIDL) 205, a message size 210, an entry identifier (EID) 215, a receive data and time 220, which

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is the local machine time, an "on server" flag 225, a "download" flag 230, and a "delete" flag 235. However, Kennedy does not disclose ***the directory is a Lightweight Directory Access Protocol (LDAP) directory service and the database tables are managed by a relational database management service.*** Bachmann discloses it may be desirable to store LDAP directory data in a backing store. FIGS. 4A-4C illustrates several representative LDAP directory service implementations that use a relational database management system (RDBMS) for this purpose. These systems merely illustrate possible LDAP directory services in which the present invention may be implemented. One of ordinary skill should appreciate, however, that the invention is not limited to an LDAP directory service provided with a DB/2 backing store. The principles of the present invention may be practiced in other types of directory services (e.g., X.500) and using other relational database management systems (e.g., Oracle, Sybase, Informix, and the like) as the backing store, (col. 4, lines 23-35) as step of ***wherein the directory is a Lightweight Directory Access Protocol (LDAP) directory service and the database tables are managed by a relational database management service.*** Therefore, it would have been obvious to one of ordinary skill in art at the time the invention was made to modify Kennedy by including the directory is a Lightweight Directory Access Protocol (LDAP) directory service and the database tables are managed by a relational database management service as taught by Bachmann. By doing so, the system provides a faster search and more efficient, (col. 2, lines 9-10).

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As to claims 7 and 12, Kennedy further discloses the method as described in claim 1 wherein the first table is an entry table, (Col. 8, lines 51-Col. 9, lines 63).

As to claims 8 and 13, Kennedy further discloses the method as described in claim 7, wherein the set of database tables includes at least one attribute storing information about an attribute, (Col. 8, lines 51-Col. 9, lines 63).

With respect to claim 9, in addition to the rejection above claim 1, Bachmann further discloses LDAP provides a number of known functions including query (search and compare), update, authentication and others. The search and compare operation are used to retrieve information from the database. For the search function, the criteria of the search are specified in a search filter. The search filter typically is a Boolean expression that consists of attribute name, attribute value and Boolean operations like AND, OR and NOT. Users can use the filter to perform complex search operation, (col. 5, lines 60-col. 6, lines 1). And a method of searching a directory organized as naming hierarchy having plurality of entries each represented by a unique identifier, comprising the steps of: in response to a search query having a given filter criteria and search scope, returning a list of entries that satisfy the given filter criteria, (col. 12, lines 15-23) as step of ***responsive to a search for directory entries that satisfy a search query, excluding tagged directory entries form search results that otherwise satisfy the search query.***

5. Claims 14-15 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bachmann et al. (US 6085188) in view of Kennedy (US 6134582).

With respect to claim 14, FIG. 1, Bachmann discloses a client machine 10 makes a TCP/IP connection over network 11 to an LDAP server 12, sends requests and receives responses. LDAP server 12 supports a directory 21 as illustrated in a simplified form in FIG. 2. Each of the client and server machines further include a directory "runtime" component 25 for implementing the directory service operations as will be described below. The directory 21 is based on the concept of an "entry" 27, which contains information about some object (e.g., a type and one or more values. Each attribute 29 has a particular syntax that determines what kinds of values are allowed in the attribute (e.g., ASCII text, binary characters, and the like), (col. 3, lines 48-61) as step of **receiving a search query**. LDAP provides a number of known functions including query (search and compare), update, authentication and others. The search and compare operation are used to retrieve information from the database. For the search function, the criteria of the search are specified in a search filter. The search filter typically is a Boolean expression that consists of attribute name, attribute value and Boolean operations like AND, OR and NOT. Users can use the filter to perform complex search operation, (col. 5, lines 60-col. 6, lines 1). And a method of searching a directory organized as naming hierarchy having plurality of entries each represented by a unique identifier, comprising the steps of: in response to a search

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query having a given filter criteria and search scope, returning a list of entries that satisfy the given filter criteria, (col. 12, lines 15-23) as step of ***responsive to a search for directory entries that satisfy a search query, excluding tagged directory entries form search results that otherwise satisfy the search query, and returning the search results.***

Bachmann discloses in FIG. 5, represents an illustrative LDAP directory service naming hierarchy 41. It is an object of the present invention to provide a scheme for mapping the naming hierarchy 41 into preferably a pair of so-called relational tables 43 and 45 in figure 6a-6b. However, Bachmann does not disclose ***wherein a given directory entry is a directory entry that has been tagged for deletion by setting an attribute of the given directory entry to a predetermined value.*** Kennedy discloses the database 39 can include multiple data fields, organized within an array structure, for maintaining message related information. To support download and delete operations, typical data fields of the database include: a session identifier (session ID) 200, a unique identifier (UIDL) 205, a message size 210, an entry identifier (EID) time, an "on server" flag 225, a "download" flag 230, and a supported by adding to the database structure certain data fields corresponding to portions of a MIME-compatible message, such as a message group identifier (message group ID) 240, a message part number 245, and a total part number 250, (col. 9, lines 50-62) as step of ***wherein a given directory entry is a directory entry that has been tagged for deletion by setting an attribute of the given directory entry to a predetermined value.*** Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made

to modify the directory entry in Bachmann by including wherein a given directory entry is a directory entry that has been tagged for deletion by setting an attribute of the given directory entry to a predetermined value as taught in Kennedy. By doing so, the business increasingly rely on e-mail messages to share ideas, transmit documents, schedule meeting, and perform a multitude of other everyday tasks, (col. 1, lines 23-25).

As to claim 15, Bachmann further discloses where in the directory service is a Lightweight Directory Access Protocol (LDAP) directory service and the database tables are managed by a relational database management service, (col. 4, lines 23-34)

With respect to claim 19, Bachmann discloses the naming hierarchy in FIG. 5 and its associated relational tables in FIGS. 6A-6B is merely illustrative. As seen in FIG. 5, the LDAP naming hierarchy includes a number of entries or nodes, with each entry or node represented by a unique entry identifier (EID). Thus, for example, the root node has an EID=1. Root has two (2) children, entry GB ("Great Britain") having an EID=2, and entry US ("United States") having an EID=3. Child node US itself has two (2) children, O=IBM (with EID=4) and Netscape (with EID=5). The remainder of the naming directory includes several additional entries at further sublevels, (col. 5, lines 10-21) as step of **a directory organized as naming hierarchy having a plurality of entries each represented by a unique identifier**. The present invention provides significant advantages in an LDAP directory service having a relational database management system (DBMS) as a backing store. According to the invention,

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entries in a naming hierarchy are mapped into first and second relational tables: a parent table, and a descendant table. These tables are used to "filter" lists of entries returned from a search to ensure that only entries within a given search scope are retained for evaluation. Thus, for example, the parent table is used during an LDAP one level search, and the descendant table are used during an LDAP sub tree search. In either case, use of the parent or descendant table obviates recursive queries through the naming directory, (col. 8, lines 46-59) as step of **a relational database management system having a backing store for storing directory data in a set of database entries**. In FIG. 1, a client machine 10 makes a TCP/IP connection over network 11 to an LDAP server 12, sends requests and receives responses. LDAP server 12 supports a directory 21 as illustrated in a simplified form in FIG. 2. Each of the client and server machines further include a directory "runtime" component 25 for implementing the directory service operations as will be described below. The directory 21 is based on the concept of an "entry" 27, which contains information about some object (e.g., a type and one or more values. Each attribute 29 has a particular syntax that determines what kinds of values are allowed in the attribute (e.g., ASCII text, binary characters, and the like), (col. 3, lines 48-61) as step of **Means for determining, responsive to receiving the request to delete a directory entry**. FIG. 8 is a flowchart for a routine call ldap-add for adding entries to the database. Because the directory structure will be changed when entries are added into the database, the parent table (or ldap_entry) and the descendant table (ldap_desc) are updated to reflect the change. In other word, after all table get created, the ldap_add

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routine is use to populated the table with correction information, (col. 6, lines 60-68) as step of **updating a first database table storing the attribute of the directory entry.** LDAP provides a number of known functions including query (search and compare), update, authentication and others. The search and compare operation are used to retrieve information from the database. For the search function, the criteria of the search are specified in a search filter. The search filter typically is a Boolean expression that consists of attribute name, attribute value and Boolean operations like AND, OR and NOT. Users can use the filter to perform complex search operation, (col. 5, lines 60-col. 6, lines 1). And a method of searching a directory organized as naming hierarchy having plurality of entries each represented by a unique identifier, comprising the steps of: in response to a search query having a given filter criteria and search scope, returning a list of entries that satisfy the given filter criteria, (col. 12, lines 15-23) as step of **responsive to a search for directory entries that satisfy a search query, excluding tagged directory entries form search results that otherwise satisfy the search query.**

Bachmann discloses in FIG. 5, represents an illustrative LDAP directory service naming hierarchy 41. It is an object of the present invention to provide a scheme for mapping the naming hierarchy 41 into preferably a pair of so-called relational tables 43 and 45 in figure 6a-6b. However, Bachmann does not disclose **to tag the directory entry for subsequent deletion by setting an attribute of the directory entry to a predetermined value; means for periodically searching for tagged directory entries in the first database table during a cleanup process interval; and means**

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for deleting reference to the tagged directory entries throughout the set of database tables. Kennedy discloses the database 39 can include multiple data fields, organized within an array structure, for maintaining message related information. To support download and delete operations, typical data fields of the database include: a session identifier (session ID) 200, a unique identifier (UIDL) 205, a message size 210, an entry identifier (EID) time, an "on server" flag 225, a "download" flag 230, and a supported by adding to the database structure certain data fields corresponding to portions of a MIME-compatible message, such as a message group identifier (message group ID) 240, a message part number 245, and a total part number 250, (col. 9, lines 50-62) as step of ***to tag the directory entry for subsequent deletion by setting an attribute of the directory entry to a predetermined value.*** . The user also can set a time-based parameter in the message manager program module 37 that define a time period for expiring all messages maintained in the local message store 38 after pre-defined time period. Because the database 39 maintains local time entries for each message, those messages satisfying the pre-defined time period for expiration can be marked with a "delete" flag. In this example, the user has set a seventy-two hour time period for expiration of a message and its associated message entry, (col. 11, lines 55-64) as step of ***mean for periodically searching for tagged directory entries in the first database table during a cleanup process interval.*** Message entries containing "delete" flags in the database 39 can be deleted from the server 49 after all messages retrieval operation are completed. In particular, all message entries marked with a "delete" flag are located in response to walking the message entries in the database 39

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and thereafter, are deleted from the server 49, (col. 11, lines 65-col. 12, lines 3) as step of *means for deleting references to the tagged directory entries throughout the set of database tables*. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bachmann with the teachings of Kennedy. By doing so, the business increasingly rely on e-mail messages to share ideas, transmit documents, schedule meeting, and perform a multitude of other everyday tasks, (col. 1, lines 23-25).

As to claim 20, Bachmann further discloses wherein the directory is compliant with the Lightweight Directory Access Protocol (LDAP), (col. 4, lines 35-45).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

7. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam V Nguyen whose telephone number is (703) 305-3735. The examiner can normally be reached on 7:30AM-5: 00PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Yen Vu can be reached on (703) 305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for formal communications and (703) 746-7240 for informal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Virginia 22202. Fourth Floor (Receptionist).

8. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

TV:tv

05/20/03


JEAN M. CORRIELUS
PRIMARY EXAMINER